

**Notice of Allowability**

Application No.

09/939,048

Examiner

Andrew C. Flanders

Applicant(s)

KATAYAMA ET AL.

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to The after final amendment filed 13 March 2007.
2. ☒ The allowed claim(s) is/are 1-7 and 18.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## DETAILED ACTION

### *Allowable Subject Matter*

Claims 1 – 7 and 18 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding **Claims 1 and 18**, Tatsuya (Japanese Patent Application Publication 10-210600, of which U.S. Patent 6,381,33 is relied upon for translation) discloses:

A signal processing apparatus, and method (Fig. 2) comprising:

a digital audio signal of a low frequency effect channel (i.e. an LFE channel; Fig. 2) and digital audio signals of first through n'th ( $n \geq 2$ ) channels (i.e. left (L), right (R), center (C), left surround (LS), and right surround (RS) digital audio channels (Fig. 2));

an adder section for adding the digital audio signal of the low frequency effect channel and the digital audio signal of a specified channel among the first through n'th channels, so as to generate an addition signal (an adder that adds the L, R, C, LS, RS signals to the LFE channel; fig. 2 element 11A)

an n number of D/A conversion sections for converting the digital audio signals of the first through n'th channels (i.e. multiple digital to analog converters);

a first signal processing section for performing a first signal processing process so as to generate an audio signal of the low frequency effect channel (i.e. a low pass filter for filtering the addition signal; fig. 1);

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a second signal processing section for performing a second signal processing process so as to generate an analog audio signal of the specified channel (i.e. high pass filters in parallel with an all pass switch; fig. 2).

Tatsuya does not disclose the signal processing sections performing the process on the analog audio signal obtained as a result of D/A conversion. However, it would have been obvious to one of ordinary skill in the art to filter the signal after the D/A conversion. It is notoriously well known in the art that filtering either before the conversion in the digital domain or after the conversion in the analog domain will result in the same processed signal. As such, the shifting of the elements would cause the invention to function the same and thus is not patentably distinct. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Furthermore, Tatsuya does not explicitly disclose a decoder for decoding a stream signal wherein the stream signal includes information of a low frequency effect channel, the information containing a low frequency component, and also includes information of the first through n'th channels, the information containing components of all frequency bands, the first through n'th channels having different sound source positions in the figure 2 embodiment of the disclosed invention. However, Tatsuya discloses decoders for converting signals recorded in the discrete digital multi channel format into ordinary signals are available (col. 1 lines 20 – 22) and in the discrete multi-channel system there are five independent channels with frequency bands from 20 Hz to 20 kHz, and one channel exclusive to low frequencies up to 120 Hz (col. 1 30 – 35)

This reads upon the limitation of a decoder for decoding a stream signal wherein the stream signal includes information of a low frequency effect channel, the information containing a low frequency component, and also includes information of the first through n'th channels, the information containing components of all frequency bands, the first through n'th channels having different sound source positions). Using this decoder is an obvious addition of the figure 2 embodiment. Tatsuya's entire purpose of the disclosed invention is to operate on signals decoded in this manner (see Background of The Invention). Therefore, adding the decoder does not require the exercise of inventive skill and is an obvious addition.

However, Tatsuya does not explicitly disclose that the number of D/A conversion sections for converting the digital audio signals of the first through n'th channels, *excluding the digital audio signal of the specified channel, and the addition signal into n types of analog audio signals.*

Tatsuya discloses that a D/A converter is required for each of the channels and the LFE channel. However, the claimed limitation specifically excludes this. Thus Tatsuya cannot anticipate this limitation. Further, it would not have been obvious to modify Fig. 2 of Tatsuya to exclude this without the hind sight of Applicant's specification.

### **Conclusion**

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Flanders whose telephone number is (571) 272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7546. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

acf



**SINH TRAN**  
**SUPERVISORY PATENT EXAMINER**